

Structure attributes must be viewed using STN Express query preparation.

## => D HIST

L4

(FILE 'HOME' ENTERED AT 13:09:51 ON 13 JUN 2003)

FILE 'REGISTRY' ENTERED AT 13:10:02 ON 13 JUN 2003

L1 STRUCTURE UPLOADED

L2 0 S L1

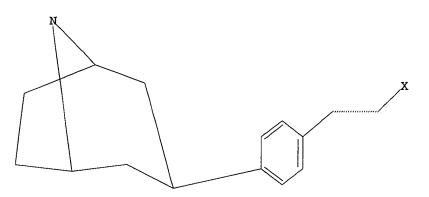
L3 1 S L1 FULL

FILE 'CAPLUS' ENTERED AT 13:10:43 ON 13 JUN 2003

1 S L3

## RE.CNT 11 THERE ARE 11 CITED REFERENCES AVAILABLE FOR THIS RECORD ALL CITATIONS AVAILABLE IN THE RE FORMAT

=> D L5 L5 HAS NO ANSWERS L5 STR



Structure attributes must be viewed using STN Express query preparation.

## => D HIST

(FILE 'HOME' ENTERED AT 13:09:51 ON 13 JUN 2003)

FILE 'REGISTRY' ENTERED AT 13:10:02 ON 13 JUN 2003

L1 STRUCTURE UPLOADED

L2 0 S L1

L3 1 S L1 FULL

FILE 'CAPLUS' ENTERED AT 13:10:43 ON 13 JUN 2003

1 S L3

FILE 'REGISTRY' ENTERED AT 14:09:23 ON 13 JUN 2003

L5 STRUCTURE UPLOADED

L6 2 S L5

L7 25 S L5 FULL

FILE 'CAPLUS' ENTERED AT 14:10:12 ON 13 JUN 2003

7 S L7

=> D L8 ABS BIB 1-7

L8 ANSWER 1 OF 7 CAPLUS COPYRIGHT 2003 ACS

GΙ

L8

L4

2.beta.-Carbomethoxy-3.beta.-(4'-((Z)-2-iodoethenyl)phenyl)nortropane [ZIENT; I [R = CH:CHI-(Z)]] and 2.beta.-carbomethoxy-3.beta.-(4'-((E)-2-(E)-E))iodoethenyl)phenyl)nortropane [EIENT; I [R = CH:CHI-(E)]] were prepd. and evaluated in vitro and in vivo for serotonin transporter (SERT) selectivity and specificity. High specific activity [1231]ZIENT and [123I] EIENT were synthesized in 45% (n = 5) and 42% (n = 4) radiochem. yield (decay-cor. to end of bombardment (EOB)), resp., by prepn. of the precursor carbomethoxy-3.beta.-(4'-((Z)-2-trimethylstannylethenyl)phenyl)n ortropane [I {R = CH:CHSnMe3-(Z)}] and 2.beta.-carbomethoxy-3.beta.-(4'-((E)-2-tributylstannylethenyl)phenyl)nortropane [I {R = CH:CHSnMe3-(E)}], resp., followed by treatment with no carrier-added sodium [123I]iodide and hydrogen peroxide in ethanolic HCl. Competition binding in cells stably expressing the transfected human SERT, dopamine transporter (DAT), and norepinephrine transporter (NET) using [3H]citalopram, [3H]WIN 35,428, and [3H] nisoxetine, resp., demonstrated the following order of SERT affinity (Ki in nM): ZIENT (0.05) > nor-CIT (0.12) .mchgt. EIENT (1.15) > fluvoxamine (1.46). The affinity of ZIENT and EIENT for DAT was 69 and 1.6-fold lower, resp., than for SERT. In vivo biodistribution and blocking studies were performed in male rats and demonstrated that the brain uptake of [1231] ZIENT was selective and specific for SERT-rich regions (hypothalamus, striatum, pons, and prefrontal cortex). SPECT brain imaging studies in monkeys demonstrated high [123I] ZIENT uptake in the diencephalon, which resulted in diencephalon-to-cerebellum ratios of 2.12 at 190 min. [1231] ZIENT uptake in the diencephalon achieved transient equil. at 157 min. In a displacement expt. of [1231] ZIENT in a cynomolgus monkey, radioactivity was reduced by 39% in the diencephalon at 101 min following injection of citalopram. The high specific activity one-step radiolabeling prepn. and high selectivity of [1231]ZIENT for SERT support its candidacy as a radioligand for mapping brain SERT sites.

AN 2003:120368 CAPLUS

DN 138:321419

TI Synthesis and Characterization of Iodine-123 Labeled 2.beta.-Carbomethoxy-3.beta.-(4'-((Z)-2-iodoethenyl)phenyl)nortropane. A Ligand for in Vivo Imaging of Serotonin Transporters by Single-Photon-Emission Tomography

AU Goodman, Mark M.; Chen, Ping; Plisson, Christophe; Martarello, Laurent; Galt, James; Votaw, John R.; Kilts, Clinton D.; Malveaux, Gene; Camp, Vernon M.; Shi, Bing; Ely, Timothy D.; Howell, Leonard; McConathy, Jon; Nemeroff, Charles B.

CS Department of Radiology, Emory University, Atlanta, GA, 30320, USA

SO Journal of Medicinal Chemistry (2008), 46(6), 925-935

CODEN: JMCMAR; ISSN: 0022-2623

PB American Chemical Society

DT Journal

English

RE.CNT 34 THERE ARE 34 CITED REFERENCES AVAILABLE FOR THIS RECORD ALL CITATIONS AVAILABLE IN THE RE FORMAT

ANSWER 2 OF 7 CAPLUS COPYRIGHT 2003 ACS

Substituted 3.beta.-phenyltropane-2.beta.-carboxylic acid Me esters I [R = AΒ Ph(CH2) mC.tplbond.C, HO(CH2) 4, Ph(CH2) n; m = 0-3; n = 2-5] are prepd. and evaluated for binding at the dopamine transporter to define the pharmacophore of the cocaine binding site at the dopamine transporter. [R = Ph(CH2)mC.tplbond.C, HO(CH2)4; m = 0-3] are prepd. by Sonogashira coupling reactions of alkynes with I (R = I); hydrogenation yields the tropanecarboxylates I [R = Ph(CH2)n; n = 2-5]. Negishi coupling of I (R = I) with Ph, benzyl, or .alpha.-styrylzinc chlorides yields I [R = Ph, PhCH2, PhC(:CH2)]. I [R = (E)-PhCH:CH, (Z)-PhCH:CH, PhCH2CH:CH] could not be prepd. by hydrogenation of I [R = Ph(CH2)mC.tplbond.C; m = 0-1]; Stille coupling of I (R = I) with (E) - and (Z) - (Me3Sn)CH:CH(SnMe3) followed by iododestannylation, sepn. of stereoisomers, and Negishi coupling with phenylzinc or benzylzinc chlorides successfully yields I [R = (E)-PhCH:CH, (Z)-PhCH:CH, PhCH2CH:CH]. Naphthyltropanecarboxylates II (R1 = H, 2-naphthyl; R2 = 2-naphthyl, H) are prepd. in a two-step sequence using Suzuki coupling of 2-naphthylboronic acid with a (triflyloxy)didehydrotropanecarboxylate followed by redn. of the unsatd. ester with SmI2 and protonation of the enolate with trifluoroacetic acid. The presence of a previously unknown remote binding domain in the cocaine binding site of the dopamine transporter is indicated by the binding affinities of I [R = Ph(CH2) mC.tplbond.C, HO(CH2) 4, Ph(CH2) n; m = 0-3; n = I (R = PhCH2CH2) binds to DAT with an IC50 value of 5.14 nM; decreasing or increasing the length of the pendant phenylethyl moiety by one methylene group decreases the IC50 values of I by factors of 102 and 68, resp. I (R = PhCH2CH2) binds nonselectively to monoamine transporters such as the serotonin and norepinephrine transporters. Electrostatic effects contribute significantly to the binding affinity of I to the dopamine transporter. The binding affinities of I suggest the existence of a more distant binding domain from the tropane rings of I in the cocaine binding site of the dopamine transporter. Steric barriers to binding of compds. to the cocaine binding site of the dopamine transporter must be overcome for high binding affinity. I (R = PhCH2C.tplbond.C) is the most potent of the tropanecarboxylates tested for binding to the dopamine transporter with a IC50 value of 1.82 nM; this compd. also binds tightly to the serotonin and norepinephrine transporters.

AN 2002:581988 CAPLUS

DN 137:294860

Synthesis and Transporter Binding Properties of 3.beta.-[4'-(Phenylalkyl, -phenylalkenyl, and -phenylalkynl)phenyl]tropane-2.beta.-carboxylic Acid Methyl Esters: Evidence of a Remote Phenyl Binding Domain on the Dopamine Transporter

AU Blough, Bruce E.; Keverline, Kathryn I.; Nie, Zhe; Navarro, Hernan; Kuhar, Michael J.; Carroll, F. Ivy

CS Chemistry and Life Sciences, Research Triangle Institute, Research Triangle Park, NC, 27709, USA

Journal of Medicinal Chemistry (2002), 45(18), 4029-4037

CODEN: JMCMAR; ISSN: 0022-2623 American Chemical Society

DT Journal

LA English

OS CASREACT 137:294860

RE.CNT 16 THERE ARE 16 CITED REFERENCES AVAILABLE FOR THIS RECORD ALL CITATIONS AVAILABLE IN THE RE FORMAT

ANSWER 3 OF 7 CAPLUS COPYRIGHT 2003 ACS

SO

PB

DT

LA OS

RE.CNT

Journal English

22

CASREACT 137:169673

The use was described of tropanes, such as I [X = C(:CH2)CH2F, CH:CHR,(CH2)2Q; Y = H, F, Cl, Br, iodo; Q = F, CH2F], as diagnostic and therapeutic agents for diseases assocd. with serotonin transporter dysfunction. These compds. bind to serotonin transporter protein with high affinity and selectivity. The invention provides methods of synthesis which incorporate radioisotopic halogens at a last step which permit high radiochem. yield and max. usable product life. The radiolabeled compds. of the invention are useful as imaging agents for visualizing the location and d. of serotonin transporter by PET and SPECT imaging. 2002:556135 CAPLUS AN DN 137:105845 Use of 4-haloethenyphenyl tropanes as serotonin transporter imaging agents ΤI IN Goodman, Mark M.; Martarello, Laurent PA U.S. Pat. Appl. Publ., 26 pp., Cont.-in-part of U.S. Ser. No. 558,916. SO CODEN: USXXCO DTPatent English LA FAN.CNT 2 APPLICATION NO. DATE PATENT NO. KIND DATE \_\_\_\_\_ \_\_\_\_\_ ----US 2001-974729 20011009 US 2002099184 **A1** 2002072 PΙ US 6399042 В1 20020604 US 2000-558916 20000426 WO 2003031452 A2 20030417 WO 2002-US32473 20021009 AE, AG, AL, AM, AT, AU, AZ, BA, BB, BG, BR, BY, BZ, CA, CH, CN, CO, CR, CU, CZ, DE, DK, DM, DZ, EC, EE, ES, FI, GB, GD, GE, GH, GM, HR, HU, ID, IL, IN, IS, JP, KE, KG, KP, KR, KZ, LC, LK, LR, LS, LT, LU, LV, MA, MD, MG, MK, MN, MW, MX, MZ, NO, NZ, OM, PH, PL, PT, RO, RU, SD, SE, \$G, SI, SK, SL, TJ, TM, TN, TR, TT, TZ, UA, UG, UZ, VC, VN, YU, ZA, ZM, ZW, AM, AZ, BY, KG, KZ, MD, RU, TJ, TM RW: GH, GM, KE, LS, MW, MZ, SD\ SL, SZ, TZ, UG, ZM, ZW, AT, BE, BG, CH, CY, CZ, DE, DK, EE, ES, FI, FR, GB, GR, IE, IT, LU, MC, NL, PT, SE, SK, TR, BF, BJ, CF, CG, CI, CM, GA, GN, GQ, GW, ML, MR, NE, SN, TD, TG PRAI US 1999-131104P P 19990426 US 2000-558916 **A2** 20000426 US 2001-974729 20011009 MARPAT 137:105845 OS ANSWER 4 OF 7 CAPLUS COPYRIGHT 2003 ACS L8 Iodinated 3.beta.-aryltropanes functionalized appropriately at the AB 2.beta.-, 8- and aryl positions display selective binding to either the dopamine or serotonin transporters. AN 2002:175754 CAPLUS DN 137:169673 Synthesis of iodinated 3.beta.-aryltropanes with selective binding to TТ either the dopamine or serotonin transporters Davies, Huw M. L.; Ren, Pingda; Kong, Norman X.; Sexton, Tammy; Childers, AU Steven R. CS Department of Chemistry, State University of New York at Buffalo, Buffalo, NY, 14260-3000, USA Bioorganic & Medicinal Chemistry Letters (2002), 12(6), 845-847 SO CODEN: BMCLE8; ISSN: 0960-894X PB Elsevier Science Ltd.

THERE ARE 22 CITED REFERENCES AVAILABLE FOR THIS RECORD

```
ANSWER 5 OF 7 CAPLUS COPYRIGHT 2003 ACS
^{18}
     Among the different Positron Emission Tomog. (PET) radioisotopes available
AΒ
     for incorporation into serotonin transporter (SERT) ligands, fluorine-18
     is the most attractive. Fluorine-18 can be prepd. in Curie quantities for
     incorporation into the SERT ligand in high specific activity by
     no-carrier-added nucleophilic substitution reactions. The synthesis in
     vitro and in vivo characterization and radiosynthesis of several new
     radioligand bioisosteres of 2.beta.-methoxycarbonyl-3.beta.-(4-ethyl-3-
     iodophenyl)nortropane, i.e., 2.beta.-methoxycarbonyl-3.beta.-[4-(2-
     [18F] fluoroethyl) - 3-halophenyl] nortropane, [halo = Br, Cl, I] as potential
     PET SERT imaging agents, is reported.
AN
     2002:174810 CAPLUS
DN
     137:370247
     Fluorine-18 serotonin transporter ligands
ΤI
     Goodman, M. M.; Chen, P.; Kilts, C. D.; Ely, T.; Davis, M.; Votaw, J. Emory Center for Positron Emission Tomography, Emory University, Atlanta,
ΑU
CS
     GA, 30320, USA
     Synthesis and Applications of Isotopically Labelled Compounds, Proceedings
SO
     of the International Symposium, 7th, Dresden, Germany, June 18-22, 2000 (2001), Meeting Date 2000, 362-366. Editor(s): Pleiss, Ulrich; Voges,
     Rolf. Publisher: John Wiley & Sons Ltd., Chichester, UK.
     CODEN: 69CIJC; ISBN: 0-471-49501-8
DT
     Conference
     English
LΑ
               THERE ARE 4 CITED REFERENCES AVAILABLE FOR THIS RECORD
RE.CNT 4
               ALL CITATIONS AVAILABLE IN THE RE FORMAT
     ANSWER 6 OF 7 CAPLUS COPYRIGHT 2003 ACS
L8
     A series of compds. in the 4-fluoroalkyl-3-halophenyl nortropanes family
AB
     are described as diagnostic and therapeutic agents for diseases assocd.
     with serotonin transporter dysfunction. These compds. bind to serotonin
     transporter protein with high affinity and selectivity. The invention
     provides methods of synthesis which incorporate radioisotopic halogens at
     a last step which permit high radiochem. yield and max. usable product
     life. The radiolabeled compds. of the invention are useful as imaging
     agents for visualizing the location and d. of serotonin transporter by PET
     and SPECT imaging.
     2000:772494 CAPLUS
AN
DN
     133:331553
     4-fluoroalkyl-3-halophenyl nortropanes
ΤI
     Goodman, Mark M. Chen, Ping
IN
PA
     Emory University, USA
SO
     PCT Int. Appl., 35 pp.
     CODEN: PIXXD2
DT
     Patent
LA
     English
FAN.CNT 2
     PATENT NO.
                       KIND
                             DATE
                                              APPLICATION NO.
                                                                DATE
                                                 2000-US11164
                                                               20000426
PΙ
     WO 2000064491
                       A1
                             20001102
         W: AU, CA, JP
                                                TR, GB, GR, IE, IT, LU, MC, NL,
         RW: AT, BE, CH, CY, DE, DK, ES, FI,
             PT, SE
                                             EP $000-931952
                                                                20000426
     EP 1212103
                        A1
                             20020612
             AT, BE, CH, DE, DK, ES, FR, GB, GR, IT, LI, LU, NL, SE, MC, PT,
         R:
             IE, FI, CY
     JP 2002542306
                        T2
                              20021210
                                              JP 2000-613481
                                                                20000426
PRAI US 1999-131104P
                        P
                              19990426
     WO 2000-US11164
                        W
                              20000426
     MARPAT 133:331553
               THERE ARE 2 CITED REFERENCES AVAILABLE FOR THIS RECORD
RE.CNT 2
               ALL CITATIONS AVAILABLE IN THE RE FORMAT
```

ANSWER 7 OF 7 CAPLUS COPYRIGHT 2003 ACS

L8 GI

$$R^4$$
N
 $CO-R^5$ 
 $R^2$ 
 $R^3$ 
 $R^1$ 
 $I$ 

Biol. active derivs. of the tropane ring system (I) [R1 = H, alkyl; R2 = H, I, radioisotopic halo, alkyl, alkyltin; R1,R2 may be fused by a -N(Me)CH=CH- to form a pyrrole ring; R3 = H, I, radioisotopic halo, alkyl; R4 = H, alkyl; R5 = H, alkyl] are provided which selectively bind either to the 5-HT or DA reuptake site, leading to compds. which have use for the treatment of clin. depression, attention deficit disorder, obesity and cocaine addiction. Thus, I [R4 = Me, R5 = Et, R3 = H, R1,R2 = -N(Me)CH=CH-] (II) is prepd. by reaction of N-methyl-2-(4-bromophenyl)pyrrole with (1R)-1-(8-methyl-8-azabicyclo[3.2.1]oct-2-en-2-yl)-1-propanone. II shows a 5-HT/NE potency ratio of >15,000 in serotonin and norepinephrine assay.

AN 2000:31245 CAPLUS

DN 132:78732

TI Tropane derivatives with selective binding to the serotonin reuptake transporters for treatment of mental illness and as intermediates in the formation of imaging diagnostic agents for depression

IN Davies, Huw M. L.; Kong, Norman; Childers, Steven R.

PA Wake Forest University, USA; The Research Foundation of State University of New York

SO U.S., 15 pp.

CODEN: USXXAM

DT Patent

LA English

FAN.CNT 1

=>

	PATENT NO.		DATE	APPLICATION NO.	DATE
P.		A	20000111	US 1998-6915 WO 1999-US2141	19980113 19990201
	W: CA, JP RW: AT, BE, PT, SE	CH, CY	, DE, DK, ES,	FI, FR, GB, GR, IE	, IT, LU, MC, NL,
ΡI		A	19980113		

OS MARPAT 132:78732

RE.CNT 11 THERE ARE 11 CITED REFERENCES AVAILABLE FOR THIS RECORD ALL CITATIONS AVAILABLE IN THE RE FORMAT

(stereoselective prepn. of phenyltropanecarboxylates, affinities for the cocaine binding site of dopamine transporters and relative selectivities for monoamine transporters)

RN 468726-54-7 CAPLUS

CN

8-Azabicyclo[3.2.1]octane-2-carboxylic acid, 3-[4-[(1E)-2-iodoethenyl]phenyl]-8-methyl-, methyl ester, (1R,2S,3S,5S)- (9CI) (CA INDEX NAME)

Absolute stereochemistry.

Double bond geometry as shown.

RE.CNT 16 THERE ARE 16 CITED REFERENCES AVAILABLE FOR THIS RECORD ALL CITATIONS AVAILABLE IN THE RE FORMAT

AΒ

Substituted 3.beta.-phenyltropane-2.beta.-carboxylic acid Me esters I [R = Ph(CH2)mC.tplbond.C, HO(CH2)4, Ph(CH2)n; m = 0-3; n = 2-5] are prepd. and evaluated for binding at the dopamine transporter to define the pharmacophore of the cocaine binding site at the dopamine transporter. I [R = Ph(CH2)mC.tplbond.C, HO(CH2)4; m = 0-3] are prepd. by Sonogashira coupling reactions of alkynes with I (R = I); hydrogenation yields the tropanecarboxylates I [R = Ph(CH2)n; n = 2-5]. Negishi coupling of I (R = I) with Ph, benzyl, or .alpha.-styrylzinc chlorides yields I [R = Ph, PhCH2, PhC(:CH2)]. I [R = (E)-PhCH:CH, (Z)-PhCH:CH, PhCH2CH:CH] could not be prepd. by hydrogenation of I [R = Ph(CH2)mC.tplbond.C; m = 0-1]; Stille coupling of I (R = I) with (E) - and (Z) - (Me3Sn)CH:CH(SnMe3) followed by iododestannylation, sepn. of stereoisomers, and Negishi coupling with phenylzinc or benzylzinc chlorides successfully yields I [R = (E)-PhCH:CH, (Z)-PhCH:CH, PhCH2CH:CH]. Naphthyltropanecarboxylates II (R1 = H, 2-naphthyl; R2 = 2-naphthyl, H) are prepd. in a two-step sequence using Suzuki coupling of 2-naphthylboronic acid with a (triflyloxy)didehydrotropanecarboxylate followed by redn. of the unsatd. ester with SmI2 and protonation of the enolate with trifluoroacetic acid. The presence of a previously unknown remote binding domain in the cocaine binding site of the dopamine transporter is indicated by the binding affinities of I [R = Ph(CH2)mC.tplbond.C, HO(CH2)4, Ph(CH2)n; m = 0-3; n = 0-32-5]. I (R = PhCH2CH2) binds to DAT with an IC50 value of 5.14 nM; decreasing or increasing the length of the pendant phenylethyl moiety by one methylene group decreases the IC50 values of I by factors of 102 and 68, resp. I (R = PhCH2CH2) binds nonselectively to monoamine transporters such as the serotonin and norepinephrine transporters. Electrostatic effects contribute significantly to the binding affinity of I to the dopamine transporter. The binding affinities of I suggest the existence of a more distant binding domain from the tropane rings of I in the cocaine binding site of the dopamine transporter. Steric barriers to binding of compds. to the cocaine binding site of the dopamine transporter must be overcome for high binding affinity. I (R = PhCH2C.tplbond.C) is the most potent of the tropanecarboxylates tested for binding to the dopamine transporter with a IC50 value of 1.82 nM; this compd. also binds tightly to the serotonin and norepinephrine transporters.

2002:581988 CAPLUS AN

DN 137:294860

Synthesis and Transporter Binding Properties of 3.beta.-[4'-(Phenylalkyl, TI -phenylalkenyl, and -phenylalkynl)phenyl]tropane-2.beta.-carboxylic Acid Methyl Esters: Evidence of a Remote Phenyl Binding Domain on the Dopamine Transporter

Blough, Bruce E.; Keverline, Kathryn I.; Nie, Zhe; Navarro, Hernan; Kuhar, ΑU Michael J.; Carroll, F. Ivy

Chemistry and Life Sciences, Research Triangle Institute, Research CS Triangle Park, NC, 27709, USA

Journal of Medicinal Chemistry (2002), 45(18), 4029-4037 SO

CODEN: JMCMAR; ISSN: 0022-2623 American Chemical Society

DT Journal

PR

LA English

CASREACT 137:294860 os

IT 468726-54-7P

RL: RCT (Reactant); SPN (Synthetic preparation); PREP (Preparation); RACT (Reactant or reagent)